REMARKS/ARGUMENTS

Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter that Applicants regard as the invention.

Claims 1 and 14 are amended.

Claims 1–12 and 14-18 are rejected under 35 U.S.C. 101 for being directed to non-statutory subject matter. To further address this rejection, claim 1, from which claims 2–12 depend, and claim 14, from which claims 15-18 depend, have been amended to explicitly clarify that the second simulation result is stored on the computer readable medium. In the previous Office Action (Paper No. 20070223), the Examiner asserted that "executing a simulation of the second step does not produce a result that is stored or conveyed to the user" or that the results obtained are not a "real world result" and therefore, the subject claims are not patentable subject matter. Applicants respectfully disagreed and presented arguments and amendments in support thereof. In particular, claim 6 which depends from claim 1 was amended to clarify and/or emphasize an animation displaying step in which results are displayed in a three-dimension animation on a display device. Without any uncertainty or doubt, this animation displaying step as previously set forth in claim 6 provides a real world result that is conveyed to the user. However, in the current Office Action (Paper No. 20070804), it appears that the Examiner has now taken a position that the result must be of **real world value**. This on its own appears to be a subjective standard that is contrary to the current case law (see e.g., *Eolas Technologies Inc. v. Microsoft Corp.*, 399 F.2d 1325, 1338 (Fed. Cir. 2005). Furthermore, Applicants note that claim

6 remains rejected but claim 19 which includes similar language is not rejected. Clarification of the status of these claims is respectfully requested.

Simulation results are not abstract or intangible as they are used to model real world conditions, parameters, settings, etc. This is further evidenced by hundreds if not thousands of issued patents that involve simulations, performing simulations, and the use of simulation results. Here, the simulation and simulation results are for a mounting process which is a real world process in the manufacture of circuitry. In U.S. Patent No. 7,263,478, the claims are directed to a system and method for performing a logic simulation of a circuit in order to verify a design via test patterns and obtaining results from such simulations (*e.g.*, simulated results). U.S. Patent No. 5,401,018 claims a baseball simulation system and method in which a baseball game is simulated, and U.S. Patent No. 7,257,525 claims systems and methods for simulating a circuit in which simulation results are obtained by performing simulations.

As established by *Eolas Technologies Inc. v. Microsoft Corp.*, software alone constitutes patentable subject matter. That is, software produces a useful, concrete, and tangible result. This holds true regardless of the type or purpose of the software. Thus, claims 1–12 and 14 constitute statutory subject matter, and withdrawal of the rejection is respectfully requested.

Claims 1–12 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarvar et al. – *Effective Modeling of the Reflow Soldering Process: Basis, Construction, and Operation of a Process Model.* Applicants respectfully disagree for at least the following reasons. Regarding claims 1 and 14 and claims 2–12 and 13-19 which depend therefrom respectively, Sarvar et al. does not teach or suggest executing a simulation based on a first condition selected for a first step; ...selecting a simulated result from the first simulation executing step as a simulation condition for a second step; and ...executing a simulation of the

second step based on a second condition comprising the simulation condition and at least a third condition that yields a second simulation result. Rather, Sarvar et al. teaches simulating peak temperature based on specific heat data which is empirically derived.

The Examiner asserts that the specific heat data is not empirically derived but that this data "may be calculated (i.e., simulated) by monitoring the heat flow" (e.g., 20070804, p. 3, paragraph ii). Applicants respectfully disagree for at least two reasons. First, a calculation or calculated result and a simulation or simulated result are not equivalent nor does one imply or suggest the other. When considering Sarvar et al. in its entirety, text that explicitly states the specific heat data is empirically derived or empirically determined cannot be ignored. Furthermore, Sarvar et al. is clear to distinguish between empirically derived data and data that is simulated ("simulated peak temperature"). That is, the term "simulated" is used throughout Sarvar et al. when it is indeed meant to describe data that has been simulated. Moreover, Sarvar et al. states that "a substantial program was established to empirically determine the Cp values for a selection of FR4 substrates and epoxy molded components..." (p. 129). Just below this, Sarvar et al. states that "the Cp was derived for each of the materials making up a PCA from samples analyzed with a calibrated Mettler TA3000 DSC. The instrument measures the heat flow into a sample and compares it to a reference standard material. Such a heat flow is directly proportional to the Cp of the substance..." Thus, the Cp (specific heat data) is empirically derived and is not simulated according to a simulation condition.

On p. 132 of Sarvar et al., under paragraph B, Sarvar et al. states that "the model of the populated PCA was constructed using empirically derived Cp values such as those in Fig. 7 ..." and further, that "the graph in Fig. 9 [is] derived from simulation and empirical results for a given point on the substrate and Table III summarizing the peak temperatures (simulated). Fig. 9

illustrates a comparison of empirical data and simulation results for a given point on the PCA.

Hence, Sarvar et al. makes it abundantly clear that the specific heat data (Cp) is empirically or

experimentally derived or determined and that the peak temperatures are simulated.

For similar reasons as discussed above, Sarvar et al. fails to teach or suggest executing a

simulation of the second step based on a second condition, wherein the *second condition*

comprises the simulation condition and at least a third condition in order to yield a second

simulation result, as recited in the rejected claims.

Hence, Sarvar et al. fails to teach or suggest each and every element as set forth in the

claim, and the rejection against claims 1-12 and 14-19 should be withdrawn.

Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Sarvar et al. As

discussed above, the specific heat data is not simulated but is in fact, explicitly described as

being empirically determined or empirically derived. Therefore, each and every element of

claim 13 is not anticipated by Sarvar et al.

More specifically, Sarvar et al. does not teach a mounting process simulation system that

includes, among other things, an executing portion for executing the simulation based on

condition input from the inputting portion wherein the executing portion includes a simulation

result outputting portion that executes the simulation of the second step based on condition data

from the condition table <u>and</u> a condition input from the inputting portion. The second simulation

is based on two conditions – one from the condition table and one from the inputting portion.

Contrary to claim 13, Sarvar et al. relates to empirically deriving varying specific heat capacity

values and then simulating a peak temperature based on each empirically derived value. Thus,

Sarvar et al. clearly does not anticipate the rejected claim 13.

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NGB-36409.

Respectfully submitted,
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